

GAETANO BORRIELLO

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Research Interests

Design and tools for the design of embedded systems; invisible computing, mobile computing and networking; user interfaces; hardware/software co-design; digital system design.

Employment

University of Washington (Seattle, WA) – Department of Computer Science and Engineering	
Professor and Associate Chair for Educational Programs	1998-
Associate Professor	1993-1998
Assistant Professor	1988-1993
Visiting Member of Research Staff, Xerox Palo Alto Research Center	1997
Visiting Professor, Scuola Superiore Sant'Anna, Pisa, Italy	1995-1996
Visiting Scientist, Inter-University Microelectronics Center, Leuven, Belgium	1992
Xerox Corporation (Palo Alto, CA) – Palo Alto Research Center	
Member of Research Staff	1981-1984
Research Intern	1980-1981
Olivetti, S. p. a. (Ivrea, Italia) – Corporate Systems Research Group	
Research Assistant	1980

Education

Ph.D. Computer Science, University of California, Berkeley, CA	1988
M.S. Electrical Engineering (Comp. Systems), Stanford University, Palo Alto, CA	1981
B.S. Electrical Engineering (Comp. Engr.), Polytechnic Institute of New York, Brooklyn, NY	1979

Professional Honors and Awards

Fulbright Pisa Chair Award – Scuola Superiore Sant'Anna, Pisa, Italia	1995-1996
Distinguished Teaching Award – University of Washington	1995
Junior Faculty Achievement Award – College of Engineering, University of Washington	1994
Presidential Young Investigator Award – National Science Foundation	1988

Current/Past Graduate Students and Collaborators

Currently advising (PhDs): Jeffrey Hightower, Kenneth Hines, Sushant Jain, Jong Hee Kang, Daniel Lloyd, Adam MacBeth, Ross Ortega, Kurt Partridge, Stefan Sigurdsson
Graduated students (PhDs): Tod Amon, Suzanne Bunton, Pai Chou, Scott Hauck, Elizabeth Walkup
Collaborators: Tom Anderson, Steven Burns, Carl Ebeling, Roy Want, David Wetherall
PhD Advisor: Randy H. Katz

Professional Activities

Advisory and Executive Committees:

Defense Sciences Study Group – Institute for Defense Analyses (DSSG IV)	1994/1995
IEEE Int'l Conference on Computer-Aided Design Executive Committee (Publicity Chair)	1992-1995
Advisory Committee, MIPS Division (CISE), National Science Foundation (member)	1988-1992

NSF Committees:

NSF/C-CR Workshop on Research Directions for Next-Generation Systems Design (co-chair)	1999
NSF/MIPS Workshop on Future Research Directions for CAD of Electronic Systems (chair)	1996
NSF/MIPS Workshop on the Design, Tools, and Test Program (chair)	1992

Professional Activities (cont'd)

Journal Editorships:

Associate editor of IEEE Transactions on VLSI	1995-1997
Associate editor of IEEE Transactions on CAD of Integrated Circuits and Systems	1997-1999
Co-guest editor (with A. Sangiovanni-Vincentelli) of IEEE Transactions on CAD of Integrated Circuits and Systems, special issue on sequential logic synthesis (1/91)	1991
Co-guest editor (with F. Catthoor, D. Verkest) of IEEE Transactions on CAD of Integrated Circuits and Systems, special issue on system-level synthesis and design (10 th ISSS)	1999
Co-guest editor (with R. Want) of Journal of Computer Graphics and Applications, special issue on information appliances	2000

Program Committee (chair):

1 st Workshop on Software Engineering for Wearable and Pervasive Computing (with ICSE)	2000
4 th University of Washington/Microsoft Research Summer Institute on the Technologies of Invisible Computing (co-chair)	1999
6 th ACM/IEEE International Workshop on Hardware/Software Co-design (general chair)	1998
5 th ACM/IEEE International Workshop on Hardware/Software Co-design (program chair)	1997
Conference on Advanced Research in VLSI (Symposium on Integrated Systems) (co-chair)	1993
4 th NSF Microelectronic System Education Conference and Exposition	1991
4 th ACM/IEEE/IFIP Int'l Workshop High-Level Synthesis (general chair)	1989
3 rd ACM/IEEE Workshop on High-Level Synthesis (program chair)	1988

Recent Publications

1. T. Amon, G. Borriello, T. Hu, J. Liu. Symbolic Timing Verification of Timing Diagrams using Presburger Formulas. 34th ACM/IEEE Design Automation Conference, Anaheim, CA, pp. 226-231, June 1997.
2. K. Hines, G. Borriello. Dynamic Communication Models in Embedded System Co-Simulation. 34th ACM/IEEE Design Automation Conference, Anaheim, CA, pp. 395-400, June 1997.
3. S. Hauck, G. Borriello. An Evaluation of Bipartitioning Techniques. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, Vol. 16, No. 8, pp. 849-866, August 1997.
4. S. Hauck, G. Borriello. Pin-Assignment in Multi-FPGA Systems. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, Vol. 16, No. 9, pp. 956-964, September 1997.
5. P. Chou, G. Borriello. Modal Processes: Towards Enhanced Retargetability through Control Composition of Distributed Embedded Systems, 35th ACM/IEEE Design Automation Conference, San Francisco, CA, pp. 88-93, June 1998.
6. K. Hines, G. Borriello. A Geographically Distributed Framework for Embedded System Design and Validation, 35th ACM/IEEE Design Automation Conference, San Francisco, CA, pp. 140-145, June 1998.
7. S. Hauck, G. Borriello, C. Ebeling. Mesh Routing Topologies for Multi-FPGA Systems. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, Vol. 6, No. 3, PP. 400-408, September 1998. Best paper award.
8. R. Ortega, G. Borriello. Communication Synthesis for Distributed Embedded Systems. IEEE/ACM International Conference on Computer-Aided Design, San Jose, CA, pp. 437-444, November 1998.
9. P. Chou, K. Hines, K. Partridge, G. Borriello. Control Generation for Embedded Systems Based on Composition of Modal Processes. IEEE/ACM International Conference on Computer-Aided Design, San Jose, CA, pp. 46-53, November 1998.
10. G. Borriello, L. Lavagno, R. Ortega. Interface Synthesis: a vertical slice from digital logic to software components. IEEE/ACM International Conference on Computer-Aided Design, San Jose, CA, November 1998.
11. P. Chou, K. Hines, R. Ortega, K. Partridge, G. Borriello. ipChinook: An Integrated IP-based Design Framework for Distributed Embedded Systems, 36th ACM/IEEE Design Automation Conference, New Orleans, LA, June 1999.
12. M. Esler, J. Hightower, G. Borriello. Next Century Challenges: Data-Centric Networking for Invisible Computing, ACM SIGMOBILE 5th International Conference on Mobile Computing and Networking, Seattle, WA, pp. 256-262, August 1999.
13. G. Borriello, Report on the Portolano Project. ACM International Workshop on Data Engineering for Wireless and Mobile Access (MobiDE), Seattle, WA, August 1999.